



PERSONAL INFORMATION

Campione, Marcello
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Date of birth: 15/09/1977, Italian
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<https://scholar.google.it/citations?user=sWpdu1YAAAAJ&hl=en>

EDUCATION

2005 **PhD Materials Science: Nanostructured Materials**, Department of Materials Science, University of Milano Bicocca, Italy. PhD Supervisor: Prof. Adele Sassella
2001 **M.Sc. Materials Science**, University of Milano Bicocca, Italy

CURRENT POSITION

From 2017 **Associate Professor** in Experimental Physics, Department of Earth and Environmental Sciences, University of Milano Bicocca, Italy

PREVIOUS POSITIONS

2008 – 2017 **Assistant Professor** in Experimental Physics, Department of Earth and Environmental Sciences, University of Milano Bicocca, Italy

2006 – 2008 **Post-Doctoral Fellow** in Physical Sciences, Department of Materials Science, University of Milano Bicocca, Italy

FELLOWSHIPS

2005 **Research Fellowship** at “Institut für Festkörperphysik” – **Technical University, Graz**, Austria. Structural characterisation of organic thin films by X-ray diffraction and textural analysis. Executive Program of Scientific and Technological Collaboration Italy/Austria, Project n. 15/2004.

2002 **Research Fellowship** at Institute “Charles Sadron” – **CNRS Strasbourg**, France. Structural characterisation of organic thin films by transmission electron microscopy. EEC Eurofet n. HPRN-CT2002-0323.

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

University of Milano Bicocca, Italy:

2016 – 2017 1 Bachelor Student of Geological Sciences and Technologies, 1 Bachelor Student of Chemical Sciences

2015 – 2016 1 Bachelor Student of Physical Sciences, 1 Bachelor Student of Geological Sciences and Technologies

2013 – 2014 1 Master Student of Materials Science

2012 – 2016 1 Master Student, 2 Bachelor Students of Geological Sciences and Technologies

2010 – 2012 1 PhD Student of Materials Science

2009 – 2011 1 PhD Student of Materials Science, 1 Post-doc of Materials Science

2008 – 2009 1 Master Student of Physical Sciences

2003 – 2004 1 Master Student of Optics and Optometry

2002 – 2006 3 Master Students of Materials Science

TEACHING ACTIVITIES

University of Milano Bicocca, Italy:

2012 – Professor of Physics – Classical Physics; Applied Geotechnics, Geological Sciences

2011 – 2012 Professor of Physics – Mechanics of Geomaterials, Geological Sciences

2009 – 2011 Professor of Physics – Introduction to Continuum Mechanics, Geological Sciences

ORGANISATION OF SCIENTIFIC SCHOOLS

2017 Member of the Scientific Committee of the first Lake Como School of Advanced Studies on *Carbon Forms, Paths, and Processes in the Earth*, 15-20 October 2017, “Villa Grumello” Como, Italy

INVITED PRESENTATIONS AND TALKS

“Probing the properties of the surface of organic crystals: from epitaxy to nanotribology” Institute of Solid State Physics, Friedrich-Schiller-University Jena, January 21st 2011.

“Rubrene: palindromic aspects of structure and reactivity of a promising organic semiconductor” Department of Mechanics and Process Engineering, ETH-Zurich, February 19th 2013.

“Friction from the Standpoint of Single Atoms: How Nanoscale Mineral Topography Drives Macroscale Seismicity” keynote talk at Goldschmidt Conference, Paris, 2017.

INSTITUTIONAL RESPONSIBILITIES

University of Milano Bicocca, Italy:

2014 – Member of the Academic Committee for Orientation and Placement

2014 – Faculty member of the board of trustees for the Doctorate School in Chemical, Geological, and Environmental Sciences

2013 – Faculty member of the board of trustees for the Doctorate School in Science

2009 – 2012 – Faculty member of the board of trustees for the Doctorate School in Earth Sciences

2011 – 2013 – Technology Transfer delegate for the Department of Earth and Environmental Sciences

COMMISSIONS OF TRUST

2010 – 2012 – Member of the Editorial Advisory Board of The Open Applied Physics Journal (Bentham)

2016 – Review panel member, National Science Centre, Poland

2016 – Review panel member, University of Florence, Italy

2003 – External Reviewer of Advanced Materials, Crystal Growth & Design, Journal of Physics: Condensed Matter, Surface Science, Physica Status Solidi, RSC Advance

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2015 – Member of the Italian Society of Mineralogy and Petrology (SIMP)

2012 – Member of the American Geophysical Union (AGU)

2011 – Member of the European Geophysical Union (EGU)

2002 – Member of the Italian Society of Physics (SIF)

MAJOR COLLABORATIONS

Annette Thierry & Bernard Lotz, Institute “Charles Sadron”, CNRS-Strasbourg, France – Transmission electron microscopy and diffraction of organic materials

Roland Resel, Institute of Solid State Physics, Technical University of Graz, Austria – Textural analysis with X-ray diffraction

Thorsten Fritz, Institute of Solid State Physics, University of Jena, Germany – X-ray/UV photoemission experiments and optical spectroscopies.

David J. Norris, Department of Materials Engineering, ETH-Zurich, Switzerland – Electrical characterization of organic semiconductors

Falko Langenhorst, Institute of Earth Sciences, Friedrich-Schiller-Universität Jena – Transmission electron microscopy and diffraction of mineral inclusions

Norberto Roveri, Department of Chemistry, University of Bologna, Italy – Hydrothermal synthesis of geoinspired nanomaterials

Matteo Alvaro, Department of Earth and Environmental Sciences, University of Pavia, Italy – XRD at synchrotron facilities and characterization of meteorites

Adrian P. Jones, Department of Earth Sciences, University College of London – Meteorite sample supply and characterization

Giandomenico Vita, Head of R&D in Praxair Surface Technologies Inc., Monte Marengo, Italy – Application of atomic force microscopies for the development of surface coatings for industrial applications

Adriano Troia, National Institute of Metrological Research (INRiM), Turin, Italy – Ultrasounds methods applied in fluid inclusions

EARLY ACHIEVEMENTS TRACK RECORDS

The achievements in my career path so far can be divided in the following major topics:

◆ Epitaxy of organic molecular semiconductors – Starting from 2001, I dealt with the application of scanning force microscopy techniques for the study of the growth dynamics of thin films of organic

semiconductors and advanced technique for their structural investigation by transmission electron microscopy. I then applied X-ray diffraction techniques to thin solid films and demonstrated the prominent role of *incommensurism* in governing epitaxy of molecular organic crystals. A large part of my experimental activity was also devoted to the growth of single crystals of molecular organic materials and their morphological and structural characterization, together with the development of new growth techniques. The most prominent achievements of this activity were exploited for the fabrication of transistors and solar cells using organic crystals and thin films as active layers.

◆ Microfluidic systems for the surface modification of organic molecular semiconductors – With the aim to develop “soft-metallization” methods for organic semiconductors, thanks to the grant funded by CARIPLO foundation, I have been dealing with the study of chemical-physical processes for the modification of the surface of organic semiconductors. Such studies valued the publication of an international patent (EP10721312NW) and the establishment of an agreement among the University of Milano Bicocca and the companies Praxair Surface Technologies and Solvay-Solexis.

◆ Hydrothermal synthesis of functional materials based on hybrid mineral-organic nanoparticles – Thanks to a collaboration with the Chemistry Department of the University of Bologna (Italy) and the Ospedale Maggiore Policlinico (General Hospital, Milan), I am leading an activity aimed at the development of hybrid materials based on geoinspired mineral matrixes bonded to nanoparticles and/or functional molecular materials. These hybrids are currently used as solid state and colloidal pH sensors and their use in therapy and diagnostic imaging is being investigated.

◆ Nanotribology of crystalline surfaces – During my transfer from the Department of Materials Science to the Department of Earth and Environmental Sciences (2009), I started an activity devoted to the study on nanometric scales of the frictional anisotropy of crystalline surfaces of minerals and to the development of geophysical models that correlates such phenomena with the fault mechanics and processes related to their seismicity.

◆ Rheological modelling of fluid inclusions and crystallization dynamics of multiphase solid inclusions – I applied concepts of mechanics of geomaterials to systems of fluid and solid inclusions in minerals, with the aim to predict their failure behaviour in relation to stress fields. I also applied epitaxial models that I developed in the context of organic-on-organic interfaces (see first point) for the study of the orientation mechanism of crystalline inclusions in minerals.

FUNDED PROJECTS WITH THE ROLE OF PRINCIPAL INVESTIGATOR

Project Title: Defects in diamond record the extreme history of presolar carbon

Funding Source: University of Milano Bicocca – Fondo di Ateneo Quota Competitiva

Amount: 25.000,00 Euros

Period: March 2018 – February 2020

Project Title: Microfluidic processes for the realization of the metal/organic semiconductor electrical contact

Funding Source: CARIPLO Foundation – Advanced Research on Materials Science

Amount: 250.000,00 Euros

Period: July 2008 – June 2011

NATIONAL AND INTERNATIONAL RECOGNITIONS

Applicant for the ERC Consolidator Grant - Call 2017. The project passed the Step 1 of the evaluation. After Step 2, the project was not retained for funding. Overall project score: B.

Qualified as Full Professor (I Fascia) in the National Scientific Qualification (ASN), 2017, scientific sector 02/B1.

LIST OF SCIENTIFIC PUBLICATIONS

<https://scholar.google.it/citations?user=sWpdu1YAAAAJ&hl=en>